Listing of Claims:

This listing of claims replaces all prior versions, and listings, of the claims in this application:

Claims 1-14 (canceled)

15. (previously amended) A rotational position sensor comprising;

a housing containing a hub including a generally circular shaped disk having a first ledge and a second ledge, a code disk including a generally circular shaped disk rigidly fixed to the first ledge of the hub, and a turn ring on the code disk having gear teeth that engage gear teeth on the housing.

16. (original) The rotational position sensor of claim 15, further comprising;

a PC board including a photodetector that reads the rotational position of the code disk and a plurality of sensors that determine whether the code disk undergoes any revolutions.

17. (original) The rotational position sensor of claim 16, wherein;

the code disk contains markings arranged around its circumference forming a unique pattern over a predetermined portion of the circumference, said unique pattern identifying a specific rotational position, and the photodetector reading the markings to identify the unique rotational position of the code disk.

18. (original) The rotational position sensor of claim 17, further comprising;

a light source that shines a light through the markings in the code disk onto the photodetector.

19. (original) The rotational position sensor of claim 18, wherein;

the markings are formed of cut-outs in the code disk.

20. (original) The rotational position sensor of claim 17, wherein;

the markings comprise equally sized bits that form the unique pattern, each bit comprising a plurality of pixels, the plurality of pixels being more than the number of pixels necessary to define each bit so that the photo detector is able to oversample each bit to more reliably identify it.

21. (original) The rotational position sensor of claim 16, wherein;

the turn ring has a magnet on its circumference that travels over the plurality of sensors, energizing specific sensors depending on the number of revolutions of the code disk.

22. (original) The rotational position sensor of claim 21, wherein;

the second ledge drives the rotation of the turn ring in a hypocycloidic path around the gear teeth in the housing.

23. (original) The rotational position sensor of claim 22, wherein;

the housing includes a cover and a base; and

the gear teeth in the housing are on the cover.

24. (original) The rotational position sensor of claim 22, wherein;

the housing includes a cover and a base; and

the gear teeth in the housing are on the base.

Claims 25-35 (canceled)